SPECIAL REPORT: Where Client/Server Fits *page 36*

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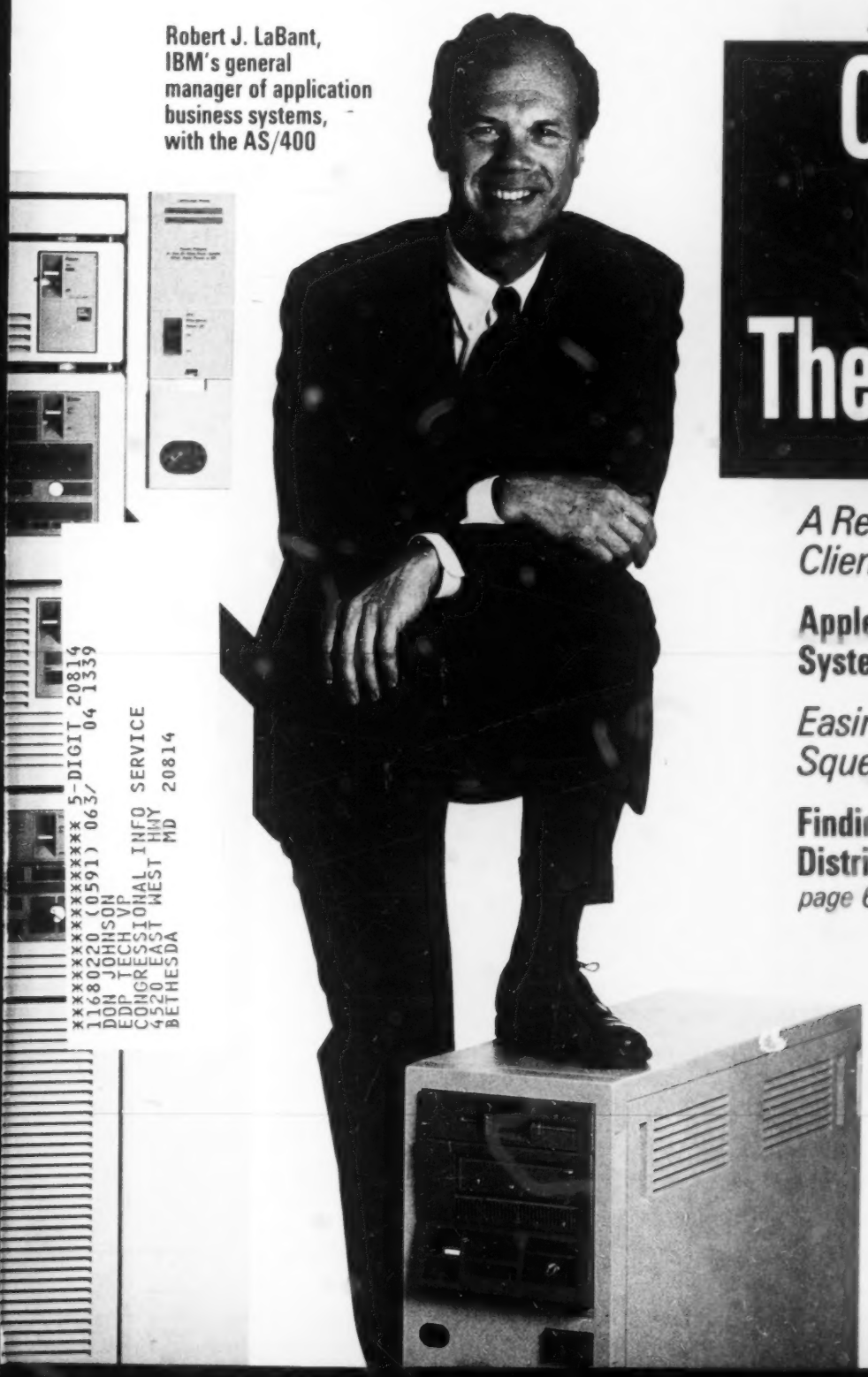
FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

JULY 15, 1991



Robert J. LaBant, IBM's general manager of application business systems, with the AS/400

Can IBM Recast The AS/400?

page 28

A Revelation In Client/Server Tools *page 42*

Apple's Switch To System 7.0 *page 46*

Easing The Data Center Squeeze *page 53*

Finding The Right Distribution Software *page 61*

Smartcards: Smarter Than Passwords *page 69*

Calculating From Scratch *page 73*

Market P

Text Management Software *page 79*

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COVER STORY

MIDRANGE SYSTEMS

Can IBM Recast The AS/400? 28

BY JOHN McMULLEN Since its introduction, IBM's AS/400 has played a traditional minicomputer role. Now it's auditioning for a starring role as a network server.

Cover photography by Arnie Adler/Blackstar

SPECIAL REPORT

CLIENT/SERVER

Where Client/Server Fits 36

BY DWIGHT B. DAVIS

Early implementers are steering clear of the twin rocks: shooting the mainframe or just using the PC for a graphic front end. Instead, client/server pioneers are using the technology to build more useful and efficient database systems.

PRODUCT GUIDE

FEATURE

Calculating From Scratch 73

BY ELIZABETH LINDHOLM

MathSoft wants its MathCAD calculation software to replace scientific calculators and 1-2-3 in the hearts and minds of engineers everywhere.

MathSoft's Razdow wants MathCAD to be the 1-2-3 for engineers.

FEATURES

PCs & WORKSTATIONS

APPLICATION DEVELOPMENT TOOLS

A Revelation In Client/Server Tools 42

BY MIKE RICCIUTI AND PAUL PINELLA With robust development tools such as Advanced Revelation, corporations are putting systems once relegated to the mainframe onto PC LANs.

OPERATING SYSTEMS

Apple's Switch To System 7.0 46

BY JOHN McMULLEN System 7.0 is now a reality, and programmers can't wait to tap into Apple's new Macintosh operating system. But until compatibility issues are resolved, some end users will have to wait.

PROFESSIONAL GROUPS

PC Managers Group Casts Wider Net 48

BY MIKE RICCIUTI The New York-based Microcomputer Managers Association is expanding beyond the Big Apple to help PC managers everywhere meet their professional goals.

NETWORKS

WANs

Easing The Data Center Squeeze 53

BY TOM McCUSKER Thanks to channel extenders, far away peripherals act like they're in the same room as the mainframe, clearing space for more DASDs and cutting remote staffing needs.

NETWORKS

ROUTERS

Push LANs Through Low-Speed Lines 57

BY TOM McCUSKER An innovative compression router not only directs traffic efficiently on a LAN internetwork but also allows the use of low-cost, dial-up lines.

SOFTWARE

APPLICATIONS

Finding The Right Distribution Software 61

BY MARILYN J. COHODAS Integrating financial management systems may be important to manufacturers today; but firms that don't integrate order, production and distribution systems may end up with no finances to manage.

LANGUAGES

Smalltalk Grows Up 64

BY JEFF MOAD Thanks to a boost from IBM and Microsoft, and a growing set of support tools, Smalltalk is finally beginning to sound good to IS.

SYSTEMS

SECURITY

Smartcards: Smarter Than Passwords 69

BY LAMONT WOOD These days, user IDs and passwords are universal. But with the value of data skyrocketing, you may want to add token-based authentication.

Seafirst's Harburg has gone client/server to take a load off his mainframes, page 36.

The Nature Conservancy has gone client/server to take a load off the environment, page 42.

PRODUCT GUIDE

▶ Market Review

Software To Manage The Paper Mountain **79**

A Selected List Of PC-Based Text Management

Software Vendors **80**

▶ User Product Review 82

Networks
What's On Your LAN?

PCs & Workstations
HP Doubles Its RISC

Peripherals
The Science Of Laser Printers

Systems
Distributing DEC

▶ New Product Review 83

A Development View Of Windows World

Laptops And Notebooks Strut Their Stuff At Spring COMDEX

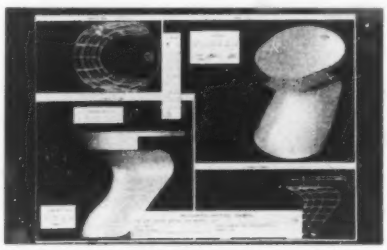
DEPARTMENTS

Inside DATAMATION. 8
Letters And Access. 12
Look Ahead. 17
Media Report. 23
Career Opportunities. 88
Market Insights. 93
Ad Index. 95
Future Vision. 96

▶ SOFTWARE

CAD Plus C

Intergraph Corp. recently unveiled MicroStation PC version 4.0, the newest release of its PC-based computer-aided design (CAD) package. The software includes the MicroStation Development Language—a full implementation of C—for creating CAD applications. Its graphical user interface now complies with the OSF/Motif GUI.



MICROSTATION PC 4.0 provides tools for creating three-dimensional objects.

Intergraph has also added tools for 3-D modeling. New features for creating wire frame models include automatic, multiline placement; intersection clean-up; and associative dimensioning. Its nonuniform B-spline surfacing features allow for easier modeling of sophisticated 3-D surfaces. Users can add nongraphical data to CAD designs through links to the Oracle relational database manager.

The $3,450 package requires at least an 80386-based personal computer equipped with a math coprocessor. INTERGRAPH CORP., Huntsville, Ala.

Circle 540

Cleaning Up DB2

Faver For DB2, from Goal Systems International Inc., speeds up the copying, restoration and organization of DB2 databases.

Database administrators can specify what parts of a database need to be changed. Faver's copy facility generates dual copies of files in a single pass to reduce time and CPU use, and it can reset the modifications on any changed page. The reorganization facility frees up and optimizes unused space created by dropped tables and speeds up the reorganization of partitioned table spaces. Prices range from $10,000 to $35,000. GOAL SYSTEMS INTERNATIONAL INC., Columbus, Ohio.

Circle 541

▶ PCs & WORKSTATIONS

DEC Gets Two ACEs In The Hole

Digital Equipment Corp.'s recent rollout of the DECstation 5000/100 series workstations marks the company's participation in the Advanced Computing Environment (ACE) vendor consortium. The two models in the RISC series, the Model 120 and the Model 125, run the ULTRIX operating system.

The DECstation series supports five different graphics subsystems, providing users with a range of configurations options for 2- or 3-dimensional graphics. The 20-megahertz Model 120 has a performance rating of 13.9 SPECmarks; the 25Mhz Model 125 is rated at 16.4 SPECmarks, according to Digital. Prices start at $6,495 for the Model 120 and $8,495 for the Model 125. DIGITAL EQUIPMENT CORP., Maynard, Mass.

Circle 542

Japanese On The Desktop

With BIKAN JALM software, users can produce Japanese characters for graphics and desktop-publishing applications.

Running Microsoft Windows 3.0, BIKAN JALM gives users access to Japanese character sets including kanji, katakana and hiragana. Characters can be exported in Windows Metafile, TIFF and EPS file formats. Users can input more than 7,000 Japanese characters using a standard IBM keyboard. Users can also input Japanese words using the Roman alphabet (called romaji); the software converts romaji into Japanese characters. BIKAN JALM is priced at $695. KNOX COMPUTER SYSTEMS INC., San Diego.

Circle 543

A New Lightweight In The Ring

Measuring 12.2×1.7×10 inches, the 6.8-pound CF-370H6 Business Partner notebook computer is small enough to fit inside most briefcases.

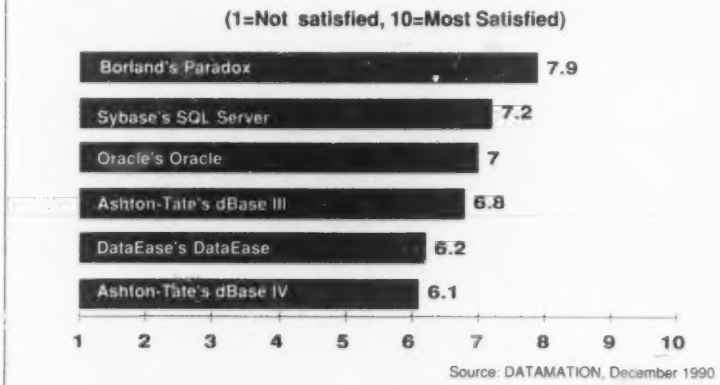
THE CF-370H6 NOTEBOOK provides 1MB of memory in a 6.8-pound unit

The 20-megahertz, 80386SX notebook comes with 1 megabyte of memory, expandable to 5MB; a 3.5-inch, 1.44MB floppy disk drive; a 60MB hard disk; and a 3-hour rechargeable battery.

The CF-370H6's resume function allows users to stop work and later return to their program without rebooting the system or reloading the software. The

IS Satisfaction Scorecard: Databases

Does your database measure up? DATAMATION surveyed IS managers who have purchased microcomputer database software to determine their level of satisfaction. Borland Paradox owners reported the highest level of satisfaction with their purchase, and dBase IV owners are less happy than those who stayed with dBase III.



Source: DATAMATION, December 1990

MARKET INSIGHTS

AN ANALYSIS OF ECONOMIC TRENDS

Communications Industry Evades Recession

BY MADELINE FRANCHI
Cahners Economics

Ebbing business confidence throughout the Persian Gulf crisis and uncertainty about the direction the economy would take has stalled spending on capital equipment by U.S. businesses, including purchases of communications equipment. In the first quarter of this year, U.S. businesses spent an annualized $51.67 billion for all types of communications equipment, which includes telephone, microwave and computer-networking hardware. In inflation-adjusted dollars, investment in communications equipment amounted to $38.76 billion, a drop of 1% relative to first-quarter 1990's level.

But we don't expect the weakness to last long, thanks in part to a recent rise in U.S. business confidence and in part to steady strength in U.S. export sales of communications equipment.

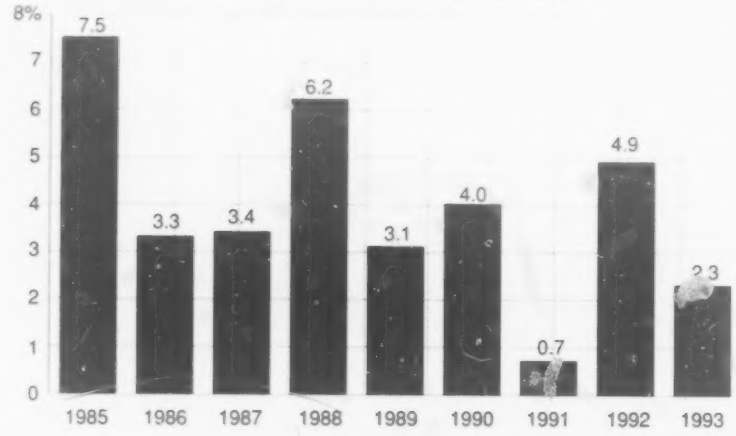
Cahners Economics expects a mild rebound in growth for purchases of communications equipment by U.S. businesses through early 1993. U.S. investment in communications gear is forecast to rise by 5% in 1992 and 3% in 1993, about average for the industry over the last five years.

Cahners Economics expects international shipments by U.S. factories of communications equipment to increase at 4.3% this year, which is slow for worldwide sales, and follows 1990's strong 10.8% rise. But worldwide sales of communications equipment will most likely turn up again, as the world's industrial nations slowly fend off their latest cyclical downturn. By next year, in fact, the international economy is expected to strengthen enough to boost shipments of communications products by 6.4% in 1992 and 7.2% in 1993.

For more information on Cahners Economics's forecasting services, including seminars, newsletters and database diskettes, call Dan Buchan at (617)-630-2105, fax him at (617)-630-2100 or write to him at Cahners Economics, 275 Washington Street, Newton, MA 02158.

This Year The Slump, Next Year The Rebound

Domestic purchases of communication equipment by U.S. businesses (annual % change, 1982 dollars)



Source: U.S. Commerce Dept.; forecasts, Cahners Economics

The Economy At A Glance

U.S. Economy: Macroeconomic And Industrial Indicators

	Actual		Forecast (Annual % Growth)		
	Q4/90	Q1/91	1990	1991	1992
Gross National Product	-1.6	-2.8	1.0	0.1	3.1
Business Investment In Equipment	6.3	-15.5	2.8	0.8	4.5
Government Spending	4.7	-2.3	2.8	-0.6	0.5
Consumer Spending	-3.4	-1.4	0.9	0.1	3.0
Exports	11.0	0.4	6.4	2.8	5.1
Imports	-11.8	-6.9	2.8	0.5	4.3

All calculations are % change in 1982 dollars, quarterly figures are seasonally adjusted annual rates

	March 1990	Feb. 1991	% Change 3/91-2/91	March 1990	% Change 1991-1990
Manufacturing Production (1)					
Process Industries Total	104.1	104.4	-0.2	107.6	-3.3
Chemicals	108.6	109.3	-0.6	109.5	-0.8
Petroleum	109.3	108.5	0.7	109.1	0.2
OEM Total	107.7	108.5	-0.7	113.5	-5.0
Computers & Peripherals	156.1	157.1	-0.6	147.3	6.0
Communication Equipment	110.1	109.6	0.5	109.0	1.0
Transportation Equipment	95.0	95.6	-0.6	107.9	-12.0
Services Employment (2)					
Finance, Insurance, Real Estate	6.779	6.764	0.2	6.774	0.1
Health Care	8.510	8.456	0.6	7.930	7.3
Computer & Data Processing	0.837	0.834	0.3	0.790	5.9
Transportation/Utilities	5.775	5.772	0.1	5.750	0.4
Retail Trade	19.115	19.094	0.1	19.361	-1.3
Wholesale Trade	6.219	6.219	0.0	6.326	-1.7
Government	18.741	18.645	0.5	18.536	1.1

(1) Index 1978=100, seasonally adjusted
(2) Millions of persons, not seasonally adjusted

Source: Commerce Dept. and Cahners Econo

MARKET INSIGHTS

A SURVEY OF TECHNOLOGY TRENDS

Users Want Multimedia Applications

BY WARREN CHILDS
Business Research Group

Multimedia technology is on the way to becoming big business. The industry has already agreed on, or proposed, most of the necessary standards for successful multimedia applications, and only a few critical technology barriers are left.

The most recent survey of the DATAMATION Technology Panel reveals that 20% have already implemented multimedia applications or plan to in the near future. Another 29% are currently in the process of evaluating the technology. In another survey recently conducted by the Business Research Group, nearly two-thirds of 200 desktop system buyers at *Fortune* 1,000 companies said they believe it will be important for desktop systems to be able to manage multimedia applications by 1995 and integrate graphics, sound, text and data.

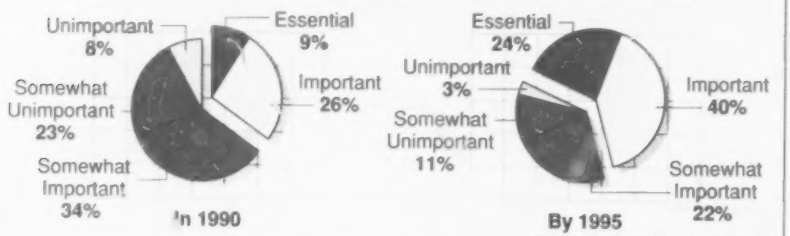
Multimedia systems are broadly defined to include any application that integrates text, graphics, voice and full-motion video. Microsoft Corp. has established a set of specifications that many see as the first step in forging an industry standard for system configuration. These specifications, named Multimedia PC (MPC), require a system with at least a 286 microprocessor, 2 megabytes of random access memory, a 30-megabyte hard drive, a 4-bit or 8-bit VGA video display, and Windows 3.0 or equivalent.

Although most multimedia applications have been targeted so far at the home and education markets, businesses are beginning to find important commercial uses for the technology, as well. For example, multimedia systems are proving to be an effective way to bring advertising closer to the point of sale. Interactive kiosks located in airports and convention centers allow travelers to view a variety of travel, hotel, dining and entertainment options for any U.S. city. ▭

For more information, call Nancy Finn at (617)-964-6204, fax her at (617)-558-4402 or write to her at the Business Research Group, 275 Washington Street, Newton, MA 02158.

The Multimedia Bandwagon Gets Rolling

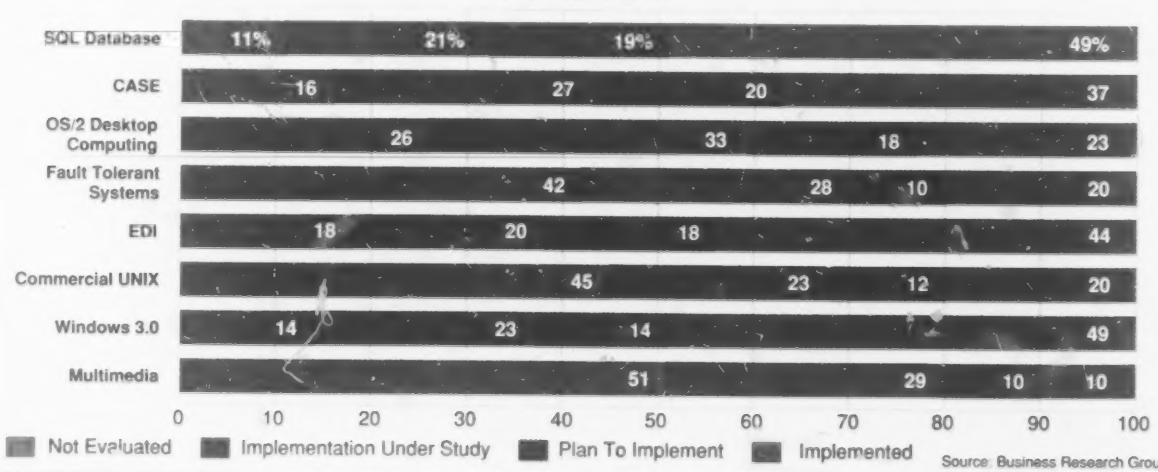
Desktop system buyers were asked to rank the importance of integrated multimedia capabilities for desktop systems purchased in 1990 and planned for 1995.



Source: Business Research Group

DATAMATION's Technology Implementation Index: Systems And Software

DATAMATION each month surveys a select group of its readers--the DATAMATION Technology Panel--to investigate the implementation of new technologies by key user organizations


% OF RESPONSES
SQL Database 11% 21% 19% 49%
CASE 16 27 20 37
OS/2 Desktop Computing 26 33 18 23
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EDI 18 20 18 44
Commercial UNIX 45 23 12 20
Windows 3.0 14 23 14 49
Multimedia 51 29 10 10
0 10 20 30 40 50 60 70 80 90 100
Not Evaluated
Implementation Under Study
Plan To Implement
Implemented

Source: Business Research Group

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